CONTEXT SENSITIVE USER INTERFACE FOR ENHANCED VEHICLE OPERATION

CROSS-REFERENCE TO PRIOR APPLICATIONS

[0001] This application claims priority to U.S. Prov. App. No. 62/938,842 titled "CONTEXT SENSITIVE USER INTERFACE FOR ENHANCED VEHICLE OPERATION" and filed on Nov. 21, 2019, and U.S. Prov. App. No. 62/938,769 titled "ENHANCED VEHICLE FUNCTIONALITY VIA PASSENGER RECOGNITION" and filed on Nov. 21, 2019, the disclosures of which are hereby incorporated herein by reference in their entirety.

BACKGROUND

Field

[0002] The present disclosure relates to user interfaces and, more particularly, to user interfaces for vehicle operation.

Description of the Related Art

[0003] Displays used to present digital user interfaces are increasingly being included in vehicles for control and/or operation of the vehicles. For example, a display may be included in a vehicle dashboard of a vehicle. In this example, the display may present a user interface including a current speed of the vehicle, a total distance traveled by the vehicle, a temperature outside of the vehicle, and so on. As another example, a display may be included in a central portion of the vehicle. This display may be used to present navigation information, control air conditioning, and so on. Such digital user interfaces may thus be used in place of mechanical displays, buttons, knobs, and so on.

[0004] However, as digital user interfaces are expanded to encompass more control and/or operation of a vehicle, the digital user interfaces are increasing in complexity. For certain digital user interfaces, this complexity reduces an ease of use associated with the user interfaces. Thus, a user experience associated with operation of a vehicle may be reduced. As an example, certain functionality may be hidden among varying levels of menus. As another example, a user may be required to memorize complex user input sequences to traverse a digital user interface. Being able to provide an intuitive digital user interface may therefore enhance a user's enjoyment in operating a vehicle.

BRIEF DESCRIPTION OF THE DRAWINGS

[0005] The foregoing aspects and many of the attendant advantages will become more readily appreciated as the same become better understood by reference to the following detailed description, when taken in conjunction with the accompanying drawings, wherein:

[0006] FIG. 1A illustrates a block diagram of an example contextual user interface system presenting a user interface.

[0007] FIG. 1B illustrates a block diagram of the example contextual user interface system presenting an updated user interface based on received user input.

[0008] FIG. 2A is a flowchart of an example process for updating a unified user interface.

[0009] FIG. 2B is a flowchart of an example process for updating a unified user interface according to a position of a vehicle.

[0010] FIG. 2C is a flowchart of an example process for updating a unified user interface based on selection of vehicle functionality.

[0011] FIG. 3A is a flowchart of an example process for using a multitasking control of a unified user interface.

[0012] FIG. 3B illustrates a user interface presenting a depiction of a vehicle along with a music user interface.

[0013] FIG. 3C illustrates the user interface presenting the depiction of the vehicle along with a quick control user interface.

[0014] FIG. 3D illustrates the user interface with a climate user interface being presented.

[0015] FIG. 4 is a flowchart of an example process for adjusting icons to a driver or passenger side.

[0016] FIG. 5A illustrates an example user interface of a parked vehicle.

[0017] FIG. 5B illustrates an example of a user interface indicating a parked vehicle while the vehicle is being charged.

[0018] FIG. 6A illustrates an example user interface of a driving view.

[0019] FIG. 6B illustrates the example user interface of a driving view with icons adjusted for a passenger view.

[0020] FIG. 6C illustrates the example user interface of a driving view with a today user interface.

[0021] FIG. 6D illustrates the example user interface of a driving view with an air conditioning user interface.

[0022] FIG. 7A illustrates an example user interface of a driving view while driving the vehicle in an "off-road" environment.

[0023] FIG. 7B illustrates an example user interface of a driving view while driving the vehicle in an "off-road" environment and also presenting drivetrain information.

[0024] FIG. 8A illustrates an example user interface for a vehicle that is towing a truck trailer.

[0025] FIG. 8B illustrates the example user interface of a driving view of a vehicle when towing a trailer.

[0026] FIG. 9 illustrates an example user interface of a vehicle while in a camper mode.

[0027] FIG. 10A illustrates an example user interface of a driving view for navigation of a vehicle.

[0028] FIG. 10B illustrates another example user interface of the driving view.

[0029] FIG. 10C illustrates another example user interface of the driving view.

[0030] FIGS. 11A-11C illustrate user interfaces for selecting navigation information.

[0031] FIG. 12 is a flowchart of an example process for associating passenger preference information with particular passengers.

[0032] FIG. 13A is a flowchart of an example process for adjusting air conditioning based on passenger tracking.

[0033] FIGS. 13B-13D illustrate example user interfaces of air conditioning tracking a passenger.

[0034] FIG. 14 is a flowchart of an example process for adjusting mirrors based on passenger eye tracking.

DETAILED DESCRIPTION

[0035] This specification describes, with respect to some embodiments, enhanced user interfaces usable to control and/or operate a vehicle. The user interfaces described herein may be examples of digital user interfaces rendered by a processor or system and presented via a display positioned within the vehicle. In some embodiments, the